ALPHAVIRUS RNA REPLICON SYSTEMS

Abstract

The present invention provides a helper cell for expressing an infectious, replication defective, alphavirus particle in an alphavirus-permissive cell. The helper cell includes (a) a first helper RNA encoding *(i)* at least one alphavirus structural protein, and *(ii)* not encoding at least one alphavirus structural protein; and (b) a second helper RNA separate from the first helper RNA, the second helper RNA *(i)* not encoding the alphavirus structural protein encoded by the first helper RNA, and *(ii)* encoding the at least one alphavirus structural protein not encoded by the first helper RNA. Preferably, the helper cell is co-transfected with a replicon RNA encoding an alphavirus packaging segment and an inserted heterogeneous RNA, such that all of the alphavirus structural proteins assemble together into alphavirus particles in the cell, with said replicon RNA packaged therein.